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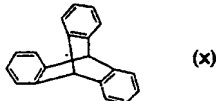
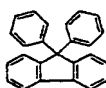
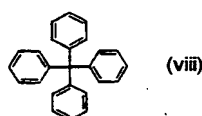
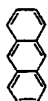
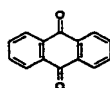
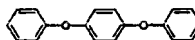
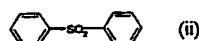
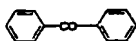
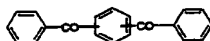
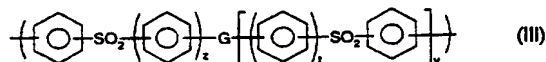
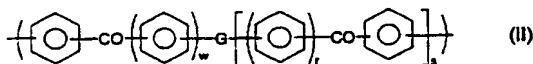
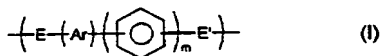
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[Continued on next page]

(54) Title: COMPOSITE ION-EXCHANGE MEMBRANES



(57) Abstract: A composite membrane for use as an ion-exchange membrane includes a conductive polymer and a support material for the polymer, said polymer having a moiety of formula (I) and/or a moiety of formula (II) and/or a moiety of formula (III), wherein at least some of the units I, II and/or III are functionalized to provide ion exchange sites; wherein the phenyl moieties in units I, II, and III are independently optionally substituted and optionally cross-linked; and wherein m, r, s, t, v, w and z independently represent zero or a positive integer, E and E' independently represent an oxygen or a sulphur atom or a direct link, G represents an oxygen or sulphur atom, a direct link or a -O-Ph-O- moiety where Ph represents a phenyl group and Ar is selected from one of the following moieties (i)*, (i) to (x) which is bonded via one or more of its phenyl moieties to adjacent moieties.

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